```
MMM         MMM     IIIIIIIII     RRRRRRRRRRRR     RRRRRRRRRRRR        000000000     RRRRRRRRRRRR
MMM         MMM     IIIIIIIII     RRRRRRRRRRRR     RRRRRRRRRRRR        000000000     RRRRRRRRRRRR
MMM         MMM     IIIIIIIII     RRRRRRRRRRRR     RRRRRRRRRRRR        000000000     RRRRRRRRRRRR
MMMMMM   MMMMMM        III        RRR         RRR  RRR         RRR  000         000  RRR         RRR
MMMMMM   MMMMMM        III        RRR         RRR  RRR         RRR  000         000  RRR         RRR
MMMMMM   MMMMMM        III        RRR         RRR  RRR         RRR  000         000  RRR         RRR
MMM   MMM   MMM        III        RRR         RRR  RRR         RRR  000         000  RRR         RRR
MMM   MMM   MMM        III        RRR         RRR  RRR         RRR  000         000  RRR         RRR
MMM   MMM   MMM        III        RRR         RRR  RRR         RRR  000         000  RRR         RRR
MMM         MMM        III        RRRRRRRRRRRR     RRRRRRRRRRRR     000         000  RRRRRRRRRRRR
MMM         MMM        III        RRRRRRRRRRRR     RRRRRRRRRRRR     000         000  RRRRRRRRRRRR
MMM         MMM        III        RRRRRRRRRRRR     RRRRRRRRRRRR     000         000  RRRRRRRRRRRR
MMM         MMM        III        RRR   RRR        RRR   RRR        000         000  RRR   RRR
MMM         MMM        III        RRR   RRR        RRR   RRR        000         000  RRR   RRR
MMM         MMM        III        RRR   RRR        RRR   RRR        000         000  RRR   RRR
MMM         MMM        III        RRR      RRR     RRR      RRR     000         000  RRR      RRR
MMM         MMM        III        RRR      RRR     RRR      RRR     000         000  RRR      RRR
MMM         MMM        III        RRR      RRR     RRR      RRR     000         000  RRR      RRR
MMM         MMM     IIIIIIIII     RRR         RRR  RRR         RRR     000000000     RRR         RRR
MMM         MMM     IIIIIIIII     RRR         RRR  RRR         RRR     000000000     RRR         RRR
MMM         MMM     IIIIIIIII     RRR         RRR  RRR         RRR     000000000     RRR         RRR
```

```
**FILE**ID**MIRROR                                  F 9





MM      MM    IIIIII    RRRRRRRR    RRRRRRRR      000000    RRRRRRRR
MM      MM    IIIIII    RRRRRRRR    RRRRRRRR      000000    RRRRRRRR
MMMM  MMMM      II      RR      RR  RR      RR  00      00  RR      RR
MMMM  MMMM      II      RR      RR  RR      RR  00      00  RR      RR
MM  MM  MM      II      RR      RR  RR      RR  00      00  RR      RR
MM  MM  MM      II      RR      RR  RR      RR  00      00  RR      RR
MM      MM      II      RRRRRRRR    RRRRRRRR    00      00  RRRRRRRR
MM      MM      II      RRRRRRRR    RRRRRRRR    00      00  RRRRRRRR
MM      MM      II      RR  RR      RR  RR      00      00  RR  RR
MM      MM      II      RR  RR      RR  RR      00      00  RR  RR
MM      MM      II      RR    RR    RR    RR    00      00  RR    RR        ....
MM      MM      II      RR    RR    RR    RR    00      00  RR    RR        ....
MM      MM    IIIIII    RR      RR  RR      RR    000000    RR      RR      ....
MM      MM    IIIIII    RR      RR  RR      RR    000000    RR      RR      ....


LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

Table of contents

```
   (1)       51        DECLARATIONS
   (1)      147        MAIN
```

```
0000        .TITLE  MIRROR -        DECNET-VAX LOOPBACK MIRROR
0000        .IDENT  'V04-000'
0000
0000  ;
0000  ;*************************************************************************
0000  ;*                                                                       *
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0000  ;*                                                                       *
0000  ;*                                                                       *
0000  ;*************************************************************************
0000  ;
0000  ;++
0000  ; FACILITY:      NETWORK MANAGEMENT LISTENER
0000  ;
0000  ; ABSTRACT:      This single module is the LOOPBACK MIRROR. It is the
0000  ;                only network management function specified for the
0000  ;                application layer of the Digital Network Architecture.
0000  ;                Its purpose is to test logical links either between nodes
0000  ;                or within a single node.
0000  ;
0000  ;
0000  ; ENVIRONMENT:
0000  ;       MODE = USER
0000  ;
0000  ; AUTHOR:        KARL MALIK, CREATION DATE: 15-APR-1980
0000  ;
0000  ; MODIFIED BY:
0000  ;
0000  ;       V03-001 MSH0001         Maryann S. Hinden               19-NOV-1981
0000  ;               Add global references to library calls.
0000  ;
0000  ;--
0000
```

```
                                      0000     51              .SBTTL  DECLARATIONS
                                      0000     52      ;
                                      0000     53      ; INCLUDE FILES:
                                      0000     54      ;
                                      0000     55      ;       NONE
                                      0000     56      ;
                                      0000     57      ; MACROS:
                                      0000     58      ;
                                      0000     59      ;       NONE
                                      0000     60
                                      0000     61      ;
                                      0000     62      ; EQUATED SYMBOLS:
                                      0000     63      ;
                                      0000     64      ;
                                      0000     65      ; OWN STORAGE:
                                      0000     66      ;
                                  00000000     67              .PSECT  MIRROR$DATA     SHR,NOEXE,RD,WRT,BYTE
                                      0000     68
45 4E 24 53 59 53 00000008'010E0000'  0000     69 LOGNAME:.ASCID  /SYS$NET/                ; Logical name & descriptor
                                  54  000E
52 4F 52 52 49 4D 00000017'010E0000'  000F     70 LOGNAM2:.ASCID  /MIRROR$SIZE/            ; Logical name & descriptor
                      45 5A 49 53 24  001D
                                      0022     71 LOG2DESC:
                           00000064   0022     72              .LONG   100
                           0000002A'  0026     73              .LONG   LOG2BUF
                           0000008E   002A     74 LOG2BUF:.BLKB   100
    3A 54 45 4E 5F 00000096'010E0000' 008E     75 DEVDESC:.ASCID  /_NET:/                  ; Pseudo-device & descriptor
                                      009B     76 DEV_CHAN:
                           0000009D   009B     77              .BLKW   1                   ; Word to receive device channel #
                           000000A5   009D     78 IOSB:        .BLKQ   1                   ; I/O status block
                                      00A5     79
                           0000003F   00A5     80 NCBDESC:.LONG   63                       ; NCB descriptor
                           000000AD'  00A9     81              .LONG   NCB
                           000000EC   00AD     82 NCB:         .BLKB   63                  ; Network connect block
                                      00EC     83
                           000000F0   00EC     84 BASEADR:.BLKL   1                        ; Adr of buffer if MIRROR$SIZE used
                           000010F1   00F0     85 BUFFER:.BLKB    4096+1                   ; Buffer
                           00001000   10F1     86 MAX_DATA=<.-BUFFER>-1                    ; Max size of data receivable (not
                                      10F1     87                                          ; Counting function code)
                                      10F1     88 DATA_SIZE:                               ; Current size of buffer
                           00001001   10F1     89              .LONG   MAX_DATA+1          ;
                                      10F5     90 RECV_SIZE:
                           000010F9   10F5     91              .BLKL   1                   ; # of bytes received
                                      10F9     92
```

```
_$

Va
--
7F
7F
7F
7F
7F
7F
7F
7F
7F
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7F
7F
7F
```

```
            10F9  ;++
            10F9  ; FUNCTIONAL DESCRIPTION:
            10F9  ;
            10F9  ;
            10F9  ;       When the LOOPBACK MIRROR accepts a connect, it returns its
            10F9  ;       maximum data size minus 1 in the accept data. This is the amount
            10F9  ;       of data it can handle, not counting the function code.
            10F9  ;
            10F9  ;       (It is possible to specify the maximum data size by defining
            10F9  ;       the logical name 'MIRROR$SIZE' in SYS$SYSTEM:MIRROR.COM. If
            10F9  ;       'MIRROR$SIZE' is not defined ( or is equal to zero ) then the
            10F9  ;       default value of 4096 is used.
            10F9  ;
            10F9  ;       When a Logical Loopback message is received, it is changed
            10F9  ;       into the appropriate response message and returned to the user.
            10F9  ;       The Loopback Mirror continues to repeat all traffic offered.
            10F9  ;       The initiator of the link disconnects it.
            10F9  ;
            10F9  ; CALLING SEQUENCE:
            10F9  ;
            10F9  ;       CONNECTED TO BY NETWORK MANAGEMENT LISTENER
            10F9  ;
            10F9  ; INPUT PARAMETERS:
            10F9  ;
            10F9  ;       NONE
            10F9  ;
            10F9  ; IMPLICIT INPUTS:
            10F9  ;
            10F9  ;       LOGICAL NAME 'SYS$NET'
            10F9  ;       LOGICAL NAME 'MIRROR$SIZE' (OPTIONAL)
            10F9  ;
            10F9  ; OUTPUT PARAMETERS:
            10F9  ;
            10F9  ;       NONE
            10F9  ;
            10F9  ; IMPLICIT OUTPUTS:
            10F9  ;
            10F9  ;       NONE
            10F9  ;
            10F9  ; COMPLETION CODES:
            10F9  ;
            10F9  ;       SUCCESS -> SENDS 1 AS THE FIRST BYTE OF THE LOGICAL LOOPBACK
            10F9  ;                  RESPONSE MESSAGE.
            10F9  ;
            10F9  ;       FAILURE -> SENDS -1 (REMAINDER OF LOGICAL LOOPBACK MESSAGE IS
            10F9  ;                  DISCARDED).
            10F9  ;
            10F9  ;
            10F9  ; SIDE EFFECTS:
            10F9  ;
            10F9  ;       NONE
            10F9  ;
            10F9  ;--
            10F9          .SBTTL  MAIN
        00000000          .PSECT  MIRROR$CODE       NOSHR,EXE,RD,NOWRT,BYTE
            0000
      0000  0000          .ENTRY  MIRROR,^M<>             ; Entry point from exec
```

```
                          0002  151          .ENABL  LSB                          ; Enable local symbol block
                          0002  152 ;
                          0002  153 ; ASSIGN A CHANNEL TO _NET: .
                          0002  154 ;
                          0002  155          $ASSIGN_S -
                          0002  156                  DEVNAM=W^DEVDESC,-           ; Adr of pseudo device descriptor
                          0002  157                  CHAN=W^DEV_CHAN              ; Adr of word to store channel #
                          0013  158
           03 50     E8   0013  159          BLBS    R0,10$                       ; Branch on success
            0186     31   0016  160          BRW     EXIT                         ; Branch (failure)
                          0019  161 ;
                          0019  162 ; TRANSLATE THE LOGICAL NAME SYS$NET TO OBTAIN THE CONNECTION INFORMATION
                          0019  163 ; CONTAINED IN THE NCB.
                          0019  164 ;
                          0019  165 10$:     $TRNLOG_S -                          ; Translate SYS$NET
                          0019  166                  LOGNAM=W^LOGNAME,-           ; Descriptor for SYS$NET
                          0019  167                  RSLLEN=W^NCBDESC,-           ; Substitute new length
                          0019  168                  RSLBUF=W^NCBDESC             ; Address of modified NCB descriptor
           03 50     E8   0032  169          BLBS    R0,30$                       ; Branch on success
            0167     31   0035  170 20$:     BRW     EXIT                         ; Branch (failure)
      50   0000'8F   B1   0038  171 30$:     CMPW    #SS$_NOTRAN,R0               ; Did we translate?
              F6     13   003D  172          BEQL    20$                          ; No translation for SYS$NET, just quit
                          003F  173
                          003F  174 ;
                          003F  175 ; TRANSLATE THE LOGICAL NAME MIRROR$SIZE AND CONVERT IT TO A HEX VALUE. IF
                          003F  176 ; NO TRANSLATION (OR VALUE IS TOO BIG OR SMALL) THEN USE 4096 DEFAULT.
                          003F  177 ;
                          003F  178          $TRNLOG_S -                          ; Translate MIRROR$SIZE
                          003F  179                  LOGNAM=W^LOGNAM2,-           ; Descriptor for MIRROR$SIZE
                          003F  180                  RSLLEN=W^LOG2DESC,-
                          003F  181                  RSLBUF=W^LOG2DESC
           03 50     E8   0058  182          BLBS    R0,40$                       ; Branch on success
            0141     31   005B  183          BRW     EXIT                         ; Branch (failure)
      55   00F0'CF   DE   005E  184 40$:     MOVAL   W^BUFFER,R5                  ; Set up to use default buffer
      50   0000'8F   B1   0063  185          CMPW    #SS$_NOTRAN,R0               ; Did we translate?
              38     13   0068  186          BEQL    W^DEFAULT                    ; No translation, branch and use default
                          006A  187
         10F1'CF     DF   006A  188          PUSHAL  W^DATA_SIZE                  ; Adr to receive hex output
         0022'CF     7F   006E  189          PUSHAQ  W^LOG2DESC                   ; Adr of ascii descriptor
   00000000'GF   02  FB   0072  190          CALLS   #2,G^FOR$CNV_IN_I            ; Convert ascii to hex
           03 50     E8   0079  191          BLBS    R0,50$                       ; Branch on success
            0120     31   007C  192          BRW     EXIT                         ; Branch (failure)
                          007F  193
                          007F  194 ;
                          007F  195 ; MAKE SURE THAT THE VALUE IS WITHIN ACCEPTABLE LIMITS.
                          007F  196 ;
         10F1'CF     D5   007F  197 50$:     TSTL    W^DATA_SIZE                  ; Is it 0?
              1D     13   0083  198          BEQL    W^DEFAULT                    ; Branch if entered value is 0
         10F1'CF     D6   0085  199          INCL    W^DATA_SIZE                  ; Leave room for function code
         00EC'CF     DF   0089  200          PUSHAL  W^BASEADR                    ; Adr to put starting adr of buffer
         10F1'CF     DF   008D  201          PUSHAL  W^DATA_SIZE                  ; # of bytes to allocate
   00000000'GF   02  FB   0091  202          CALLS   #2,G^LIB$GET_VM              ; Allocate the new buffer
           07 50     E9   0098  203          BLBC    R0,W^DEFAULT                 ; Use the default if LIB$GET_VM failed
      55   00EC'CF   D0   009B  204          MOVL    W^BASEADR,R5                 ; Set up to use new buffer
              07     11   00A0  205          BRB     55$                          ; OK, entered value is acceptable
                          00A2  206
                          00A2  207 DEFAULT:
```

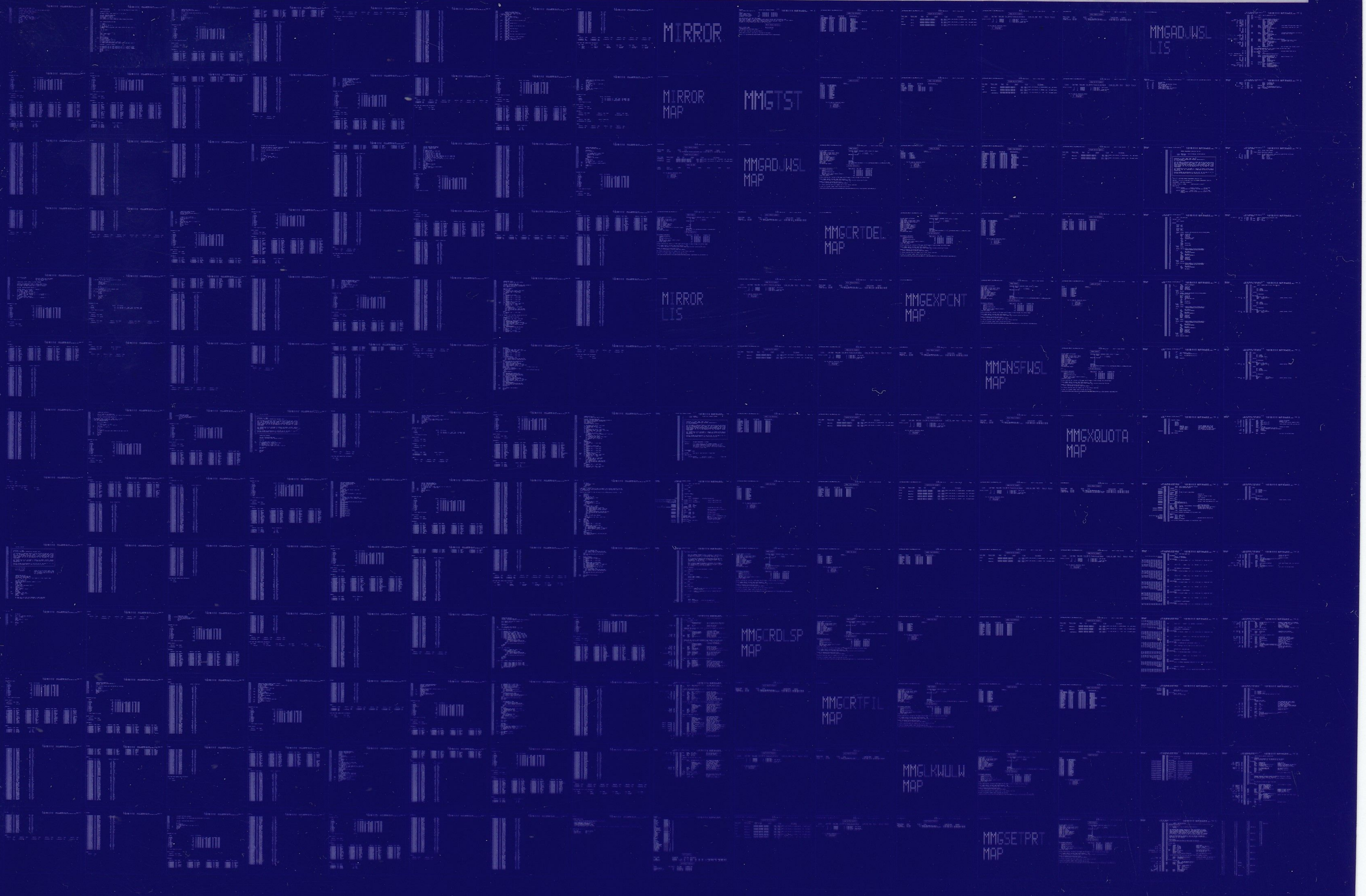
```
  10F1'CF   1000 8F    3C  00A2             MOVZWL  #MAX_DATA,W^DATA_SIZE   ; Use 4096 default value
            10F1'CF    D6  00A9      55$:   INCL    W^DATA_SIZE             ; Leave room for function code
                           00AD
                           00AD      ;
                           00AD      ; LOCATE THE OPTIONAL DATA IN THE NCB (IF PRESENT) AND REPLACE IT
                           00AD      ; WITH THE MAXIMUM DATA SIZE.
                           00AD      ;
00AD'CF     00A5'CF   2F   3A  00AD      60$:   LOCC    #^A\/\,W^NCBDESC,W^NCB  ; Locate the slash
                      06   12  00B5             BNEQ    70$                     ; Branch if successful
                50   00'   3C  00B7             MOVZWL  S^#SS$_ABORT,R0         ; Set up error code (LOCC zeroed R0)
                    00E2   31  00BA             BRW     EXIT                    ; Branch (failure)
                      81   B5  00BD      70$:   TSTW    (R1)+                   ; Skip over word
                      81   95  00BF             TSTB    (R1)+                   ; Skip one more byte
                81    02   90  00C1             MOVB    #2,(R1)+                ; Alter count field
           61    10F1'CF   B0  00C4             MOVW    W^DATA_SIZE,(R1)        ; Substitute maximum data size
                      81   B7  00C9             DECW    (R1)+                   ; Leave room for function code
                61    22   90  00CB             MOVB    #^A/"/,(R1)             ; Add new termination character
                           00CE      ;
                           00CE      ; ACCEPT THE CONNECTION REQUEST FROM NETWORK MANAGEMENT LISTENER.
                           00CE      ;
                           00CE             $QIOW_S -                       ; Issue connect confirm request
                           00CE                     EFN=#1,-                ; Use local event flag #1
                           00CE                     CHAN=W^DEV_CHAN,-       ; Use the assigned channel
                           00CE                     FUNC=S^#IO$_ACCESS,-    ; Accept the link
                           00CE                     IOSB=W^IOSB,-           ; Address of I/O status block
                           00CE                     P2=#NCBDESC             ; Address of NCB descriptor
                   03 50   E8  00F1             BLBS    R0,80$                  ; Branch on success
                    00A8   31  00F4             BRW     EXIT                    ; Branch (failure)
           50    009D'CF   3C  00F7      80$:   MOVZWL  W^IOSB,R0               ; Get I/O completion status
                   03 50   E8  00FC             BLBS    R0,W^LOOP               ; Branch on success
                    009D   31  00FF             BRW     EXIT                    ; Branch (failure)
                           0102      ;
                           0102      ; RECEIVE A MESSAGE FROM NML.
                           0102      ;
                           0102      LOOP:  $QIOW_S -                       ; Issue receive request
                           0102                     EFN=#1,-                ; Use local event flag #1
                           0102                     CHAN=W^DEV_CHAN,-       ; Use assigned channel
                           0102                     FUNC=S^#IO$_READVBLK,-  ; Read virtual block
                           0102                     IOSB=W^IOSB,-           ; Address of I/O status block
                           0102                     P1=(R5),-               ; Address of input buffer
                           0102                     P2=W^DATA_SIZE          ; Length of input buffer
  009D'CF   0000'8F    B1  0123             CMPW    #SS$_DATAOVERUN,W^IOSB  ; Too much data?
                 2A    13  012A             BEQL    90$                     ; Branch if too much data
  009D'CF   0000'8F    B1  012C             CMPW    #SS$_LINKABORT,W^IOSB   ; Did partner issue disconnect abort?
                 67    13  0133             BEQL    W^DISC                  ; Branch if disconnect abort
  009D'CF   0000'8F    B1  0135             CMPW    #SS$_LINKDISCON,W^IOSB  ; Did partner issue sync disconnect?
                 5E    13  013C             BEQL    W^DISC                  ; Branch if sync disconnect
  009D'CF   0000'8F    B1  013E             CMPW    #SS$_ABORT,W^IOSB       ; Was the link aborted (old code)?
                 55    13  0145             BEQL    W^DISC                  ; Branch if link aborted
              55 50    E9  0147             BLBC    R0,W^EXIT               ; Branch on failure
       50   009D'CF    3C  014A             MOVZWL  W^IOSB,R0               ; Get I/O completion status
              4D 50    E9  014F             BLBC    R0,W^EXIT               ; Branch on failure
                           0152      ;
                           0152      ; MAKE SURE THAT THE FUNCTION CODE IS ZERO.
                           0152      ;
              65       95  0152             TSTB    (R5)                    ; Is function code correct?
              0B       13  0154             BEQL    100$                    ; Branch if zero (valid)
       65    FF 8F    90  0156    265 90$:      MOVB     #-1,(R5)                       ; Set up failure return code
   009F'CF      01    9B  015A    266           MOVZBW   #1,W^IOSB+2                    ; Set up new length
                03    11  015F    267           BRB      REFLECT                        ; Branch and continue
        65      01    90  0161    268 100$:     MOVB     #1,(R5)                        ; Set up success return code
                          0164    269 ;
                          0164    270 ; REFLECT THE MESSAGE BACK TO NML.
                          0164    271 ;
                          0164    272 REFLECT:
 10F5'CF   009F'CF    B0  0164    273           MOVW     W^IOSB+2,W^RECV_SIZE           ; Get length of message to reflect
                          016B    274           $QIOW_S -                               ; Issue transmit request
                          016B    275                    EFN=#1,-                       ; Use local event flag #1
                          016B    276                    CHAN=W^DEV_CHAN,-              ; Use assigned channel
                          016B    277                    FUNC=#IO$_WRITEVBLK,-          ; Write virtual block
                          016B    278                    IOSB=W^IOSB,-                  ; Address of I/O status block
                          016B    279                    P1=(R5),-                      ; Address of output buffer
                          016B    280                    P2=W^RECV_SIZE                 ; Length of output buffer
             0E 50    E9  018E    281           BLBC     R0,EXIT                        ; Branch on failure
       50  009D'CF    3C  0191    282           MOVZWL   W^IOSB,R0                      ; Get I/O completion status
             06 50    E9  0196    283           BLBC     R0,EXIT                        ; Branch on failure
              FF66    31  0199    284           BRW      LOOP                           ; Reissue receive request
                          019C    285 ;
                          019C    286 ; EXIT WITH STATUS (IN R0).
                          019C    287 ;
       50      00'    3C  019C    288 DISC:     MOVZWL   S^#SS$_NORMAL,R0               ; Set up success status code
                          019F    289 EXIT:     $EXIT_S  R0                             ; Exit with status to be displayed
                          01A8    290                                                   ; on exit
                          01A8    291           .DSABL   LSB                            ; Disable local symbol block
                          01A8    292           .END     MIRROR                         ; Image transfer address
```

```
$$T1             = 00000001
BASEADR            000000EC R       01
BUFFER             000000F0 R       01
DATA_SIZE          000010F1 R       01
DEFAULT            000000A2 R       02
DEVDESC            0000008E R       01
DEV_CHAN           0000009B R       01
DISC               0000019C R       02
EXIT               0000019F R       02
FOR$CNV_IN_I       ********     X   02
IO$_ACCESS         ********     X   02
IO$_READVBLK       ********     X   02
IO$_WRITEVBLK      ********     X   02
IOSB               0000009D R       01
LIB$GET_VM         ********     X   02
LOG2BUF            0000002A R       01
LOG2DESC           00000022 R       01
LOGNAM2            0000000F R       01
LOGNAME            00000000 R       01
LOOP               00000102 R       02
MAX_DATA         = 00001000
MIRROR             00000000 RG      02
NCB                000000AD R       01
NCBDESC            000000A5 R       01
RECV_SIZE          000010F5 R       01
REFLECT            00000164 R       02
SS$_ABORT          ********     X   02
SS$_DATAOVERUN     ********     X   02
SS$_LINKABORT      ********     X   02
SS$_LINKDISCON     ********     X   02
SS$_NORMAL         ********     X   02
SS$_NOTRAN         ********     X   02
SYS$ASSIGN         ********    GX   02
SYS$EXIT           ********    GX   02
SYS$QIOW           ********    GX   02
SYS$TRNLOG         ********    GX   02

                                       +----------------+
                                       ! Psect synopsis !
                                       +----------------+

PSECT name                        Allocation          PSECT No.  Attributes
----------                        ----------          ---------  ----------
.  ABS  .                         00000000  (     0.)  00 (  0.)  NOPIC   USR   CON   ABS   LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
MIRROR$DATA                       000010F9  (  4345.)  01 (  1.)  NOPIC   USR   CON   REL   LCL   SHR NOEXE   RD     WRT NOVEC BYTE
MIRROR$CODE                       000001A8  (   424.)  02 (  2.)  NOPIC   USR   CON   REL   LCL NOSHR   EXE   RD   NOWRT NOVEC BYTE

                                     +------------------------+
                                     ! Performance indicators !
                                     +------------------------+

Phase                     Page faults    CPU Time       Elapsed Time
-----                     -----------    --------       ------------
Initialization                     47    00:00:00.11    00:00:01.65
Command processing                143    00:00:00.57    00:00:03.60
Pass 1                            129    00:00:01.68    00:00:07.88
Symbol table sort                   0    00:00:00.02    00:00:00.04
```

```
Pass 2                            68       00:00:00.76      00:00:03.61
Symbol table output                4       00:00:00.04      00:00:00.18
Psect synopsis output              2       00:00:00.03      00:00:00.08
Cross-reference output             0       00:00:00.00      00:00:00.00
Assembler run totals             395       00:00:03.23      00:00:17.05

The working set limit was 1050 pages.
8044 bytes (16 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 36 non-local and 11 local symbols.
292 source lines were read in Pass 1, producing 17 object records in Pass 2.
8 pages of virtual memory were used to define 8 macros.

                                                 +----------------------------+
                                                 ! Macro library statistics !
                                                 +----------------------------+

Macro library name                               Macros defined
------------------                               --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2                      8

86 GETS were required to define 8 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:MIRROR/OBJ=OBJ$:MIRROR MSRC$:MIRROR/UPDATE=(ENH$:MIRROR)
```

0235 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
CONFIDENTIAL AND PROPRIETARY



MIRROR

MMGADJWSL
LIS

MIRROR
MAP

MMGTST

MMGADJWSL
MAP

MMGCRTDEL
MAP

MIRROR
LIS

MMGEXPCNT
MAP

MMGNSPWSL
MAP

MMGXQUOTA
MAP

MMGCRDLSP
MAP

MMGCRTFIL
MAP

MMGLKWULW
MAP

MMGSETPRT
MAP